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| 09/994,140      | 11/26/2001  | Kenji Nakano         | 7217/65967          | 8592             |

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| EXAMINER |
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JONES, HEATHER RAE

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09/12/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |                                      |  |
|------------------------------|--------------------------------------|--------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>09/994,140 | <b>Applicant(s)</b><br>NAKANO ET AL. |  |
|                              | <b>Examiner</b><br>Heather R. Jones  | <b>Art Unit</b><br>2621              |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 11 June 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-4,7 and 9-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4,7 and 9-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2001 and 01 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed June 11, 2007 have been fully considered but they are not persuasive.

The Applicant argues on page 7, lines 20-29 that Inanaga et al. fails to expressly or inherently disclose an "image-changing means provided a video signal representing an image stretched over a 360-degree range surrounding the user via the head-mounted display, the image-changing means for extracting a video signal representing an image stretched over the visual-field range visible to the user via the head-mounted display from the provided video signal in accordance with the detected orientation of the head of the user and for supplying the extracted video signal to the head-mounted display". The Examiner respectfully disagrees. Inanaga et al. discloses a detecting means, which includes a position detecting means for detecting relevant movement of the user, that sends a detection signal from the position detecting means to the control means in order produce video and audio signals that are localized and corrected according to the corresponding movements of the user. Inanaga et al. also discloses in Fig. 20 that the user is not restricted in regards to their movements and that they can completely turn around encompassing 360 degrees (col. 40, lines 18-36). Furthermore, the Applicant discloses on page 17, lines 5-11 of their specification that it is not necessary to supply a video signal representing all prepared surroundings to the listener and that instead it is

necessary to merely supply a video signal of an image over a range broader than at least a visual – field range in which the listener can watch the image in through a head mounted display. Therefore, Inanaga et al. meets the claim limitations and the rejection is maintained.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-4, 7, and 9-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Inanaga et al. (U.S. Patent 5,796,843).

Regarding claim 1, Inanaga et al. discloses an audio and video reproduction apparatus, comprising: a head-mounted display (193) for converting a video signal into an image to present to a user (col. 36, lines 64-67); a pair of acoustic transducers (24) each used for converting an audio signal into a sound to present to the user (col. 19, lines 11-12); detection means (63) for detecting an orientation of the head of the user (col. 23, lines 24-38); image-changing means provided a video signal representing an image stretched over a 360-degree range surrounding the user via the head-mounted display, the image-changing means for extracting a video signal representing an image stretched over the visual-field range visible to the user via the head-mounted display from the

provided video signal in accordance with the detected orientation of the head of the user and for supplying the extracted video signal to the head-mounted display (Fig. 20 – the user can rotate 360 degrees; col. 4, line 57 – col. 5, line 20; col. 38, lines 10-19; col. 40, lines 18-36); and sound-image localization processing means for performing out-of-head sound-image localization processing based on transfer functions from a sound-image localized position of a provided audio signal to ears of the user in accordance with the detected orientation of the head of the user to produce a two-channel audio signal and for supplying the two-channel audio signal to the acoustic transducers (col. 37, line 66 – col. 38, line 10).

Regarding claim 2, Inanaga et al. discloses all the limitations as previously discussed with respect to claim 1 including that the pair of acoustic transducers are one of headphones mounted on the head of the user and a pair of earphones attached to ears of the user (col. 24, line 58 – col. 25, line 4).

Regarding claim 3, Inanaga et al. discloses all the limitations as previously discussed with respect to claim 1 including that the pair of acoustic transducers are speakers provided at positions close to the ears of the user (col. 24, line 58 – col. 25, line 4).

Regarding claim 4, Inanaga et al. discloses all the limitations as previously discussed with respect to claim 1 including that the detection means comprises a sensor mounted on the head of the user and a conversion unit for converting a

detection signal generated by the sensor into a signal representing the orientation of the head of the user (col. 4, line 57 – col. 5, line 20).

Regarding claim **7**, Inanaga et al. discloses all the limitations as previously discussed with respect to claim 1 including that the image-changing means is a video synthesis circuit for synthesizing video signals representing images stretched over a visual-field range visible to the user via the head-mounted display in accordance with the orientation of the head of the user (col. 4, line 57 – col. 5, line 20).

Regarding claim **9**, Inanaga et al. discloses all the limitations as previously discussed with respect to claim 1 including that the sound-image localization processing means converts an audio signal representing a sound covering a 360-degree range surrounding the user into an audio signal that is supplied to the pair of acoustic transducers as a reproduction signal as if the reproduced sound image were localized outside the head of the user (col. 4, line 57 – col. 5, line 20).

Regarding claim **10**, Inanaga et al. discloses all the limitations as previously discussed with respect to claim 1 including that the video signal supplied to the head-mounted display and the audio signals supplied to the acoustic transducers are reproduced from a recording medium (col. 16, line 59 – col. 17, line 16).

Regarding claim **11**, Inanaga et al. discloses all the limitations as previously discussed with respect to claim 1 including that the video signal

supplied to the head-mounted display and the audio signals supplied to the acoustic transducers are received from a network in real time (col. 16, line 59 – col. 17, line 16).

Regarding claim **12**, Inanaga et al. discloses an audio and video reproduction apparatus, comprising: a head-mounted display (193) that converts a video signal into an image to present to a user (col. 36, lines 64-67); a pair of acoustic transducers (24) that converts an audio signal into a sound to present to the user (col. 19, lines 11-12); magnetic or gyroscopic head orientation detector that determines changing orientation of the user; image-changing processor configured to receive a video signal representing an image of a 360-degree range surrounding the user of the head-mounted display and to extract, from the received video signal, a video signal representing an image of a visual-field range visible to the user of the head-mounted display as a function of the changing orientation of the head of the user as detected by the head orientation detector and to provide the extracted video signal for presenting to the user by the head-mounted display (Fig. 20 – the user can rotate 360 degrees; col. 4, line 57 – col. 5, line 20; col. 20, lines 33-45; col. 23, lines 24-38; col. 38, lines 10-19; col. 40, lines 18-36); and sound-image localization processor circuit configured to perform out-of-head localization processing to control a change in a sound image localization position of a provided audio signal by filtering the audio signal to produce a two-channel audio signal as a function of the changing orientation of

the head of the user as detected by the head orientation detector (col. 37, line 66 – col. 38, line 10).

### ***Conclusion***

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Heather R. Jones whose telephone number is 571-272-7368. The examiner can normally be reached on Mon. - Thurs.: 7:00 am - 4:30 pm, and every other Fri.: 7:00 am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on 571-272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Heather R Jones  
Examiner  
Art Unit 2621

HRJ  
August 22, 2007

A handwritten signature in black ink, appearing to read 'J. Miller', with a long horizontal flourish extending to the right.

JOHN MILLER  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600